



January 11, 2017

ArchitectureWorks, LLP
130 19th Street South
Birmingham, AL 35233

Attn: Cindy Coyle

Re: The Ramsay McCormack Building
Structural Walk-Thru

Dear Cindy,

Representative from MBA visited the above referenced job site on January 9, 2017. The purpose of our visit was to review the condition of structure and form an opinion whether it is structurally feasible to renovate. The opinion contained in this report is based upon a visual observation only. MBA did not perform any calculations nor did we perform any selected demolition to uncover hidden conditions.

The existing building is a 10-story concrete frame with a basement, built in the 1920's. It is our understanding that the building was primarily used as an office building. The exterior walls are a combination of clay brick and terra cotta tiles with clay masonry backing. The floors are framed using a concrete pan and joist system supported by cast-in-place concrete girders. The joists appear to be 5" wide x 17" deep and spaced at 25" on center.

It is our opinion that the building can be renovated as an office building. This opinion is based upon the condition of the structure and the International Building Code requirements for Live Loads. Based upon its previous use, we estimate that the Live Load capacity of the floors to be 80 pounds per square foot. The 80 psf would not be adequate for uses such as assemblies, high-density files or storage. Also, it is our opinion that this structure would not easily meet the IBC requirements for an "Essential Facility". This means that this building could not be used for the following uses without major structural modifications:

- Fire, rescue, ambulance and police stations and emergency vehicle garages.
- Designated emergency preparedness, communications and operations centers and other facilities required for emergency response.

It is possible that the building will have to be modified to meet the current wind loading requirements prescribed in the IBC. The wind loads are changed significantly since the building was constructed and it does not appear that the building has a well-defined lateral load system. It appears that the wind loads are being resisted by concrete moment frames. Also, it is highly unlikely that seismic loads were considered for the design of the structure. Due to proposed amount of renovations, the International Existing Building Code would require that the structure is strengthened to meet the current wind and seismic loading. The City of Birmingham has exempted existing structures from having to meet the current code required seismic loading. If we cannot get some relief from the wind loading, there will be major changes to the structure that are required.

If the building does not have to be upgrade for current wind loading, it is our opinion that the structural renovations will be as follows:

- Basement – The basement is holding approximately 2'-0" of water. Therefore, we did not examining the condition of the walls and the first floor. Based upon our past experience, prolonged exposure to moisture detrimentally effects the performance pf concrete. The reinforcing steel rusts and concrete losses capacity. We recommend that the basement be waterproofed in order to minimize damage to the structure.
- Sidewalk – The sidewalk is a framed slab above the basement. Typically, the structure is designed to support the weight of fire trucks (250 psf). Also, the structure in this area is continuously exposed to the elements. Therefore, we anticipate that sidewalk structure will have to be repaired. Further study will have to be performed in order to identify the deficiencies and develop a plan of action.
- General Concrete Framing – There are numerous areas where reinforcing steel is exposed. It is our opinion that most cases are caused because the rebar was installed too close to the bottom of the forms. These cases are usually addressed by applying cementitious material to the areas to protect the rebar. However, there are isolated areas where the rebar is exposed because it has rusted. Reinforcing steel expands when it rusts. The rust is a reduction in the effective area of the steel and will adversely impact the load capacity of the structure. Some of these areas may have to be externally reinforced by wrapping the concrete in Carbon Reinforced Polymer (CRP). This is a procedure that is used to strengthen existing concrete structural elements. Finally, there are areas where existing cuts in the structural slab in order to install items such as conduit. These areas will have to be patch with a structural epoxy grout.
- Building Façade – The typical stability of the building facade was not thoroughly reviewed. We did not have the equipment onsite to review all conditions. It did appear that there was rusting in the relief angle. Also, there were signs where there were cracks in the brick veneer or places where it appeared that there were places where the façade has failed. It is possible that the entire will have to be removed and re-applied. This scope cannot be determined until a comprehensive study is performed.

Sincerely,



Keith L. Owens, P.E.
Senior Principal
MBA Engineers, Inc.

